

REPORT DOCUMENTATION PAGE

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Contractor's Progress, Status and Management Report -- Monthly Progress Report

**Period Covered by the Report
1 June through 30 June 1999**

Date of Report: 15 July 1999

Wrist Interactive Device for Wearable PC
SBIR Phase II Topic N95-137
Contract No. N00421-97-C-1293
Dollar Value \$1,708,653

ViA Inc.
11 Bridge Square
Northfield, MN 55057

Sponsor
Charles D. Caposell
Naval Air Systems Command
AIR-4.5T

Data Item No. 003
Contract Reference Item 0003
Authority - Data Acquisition Documentation No. DI-MGMT-80227
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1. Progress & Plans

The design, fabrication, and assembly of the WID101 boards (i.e. the second revision StrongARM boards) is now complete. We encountered a few delays caused by silly issues such as receiving the wrong flash components from Intel (the outside package was correct, but the parts inside were not). These boards are of the appropriate X- and Y-dimension to allow them to be mounted behind the highly-reflection 8.3" hand-held display..

Checkout and debug of the boards has begun. We have RAM, CPU, and serial ports operational. So far we are very pleased with the low number of errors that have been discovered.

New firmware for the Xetron radio was received and successfully programmed into the Atmel processor. This firmware has addressed the high rate of bit errors that had been encountered with previous boards. Prior to this modification and some additional optimization of system parameters, we were encountering extremely high rates of single-bit errors. At this point, the boards are performing adequately. We will continue to work with these boards to allow us to optimize overall system architecture. We continue to plan an eventual migration to Bluetooth once appropriate components become available. In the meantime, we will also plan to migrate to Xetron's ASIC as a risk mitigation.

We continue to work with Ericson and Symbionics to obtain access to development boards and chipsets for the Ericsson Bluetooth Radio. Symbionics has slipped the delivery schedule to mid July, although we expect to be informed of additional delays.

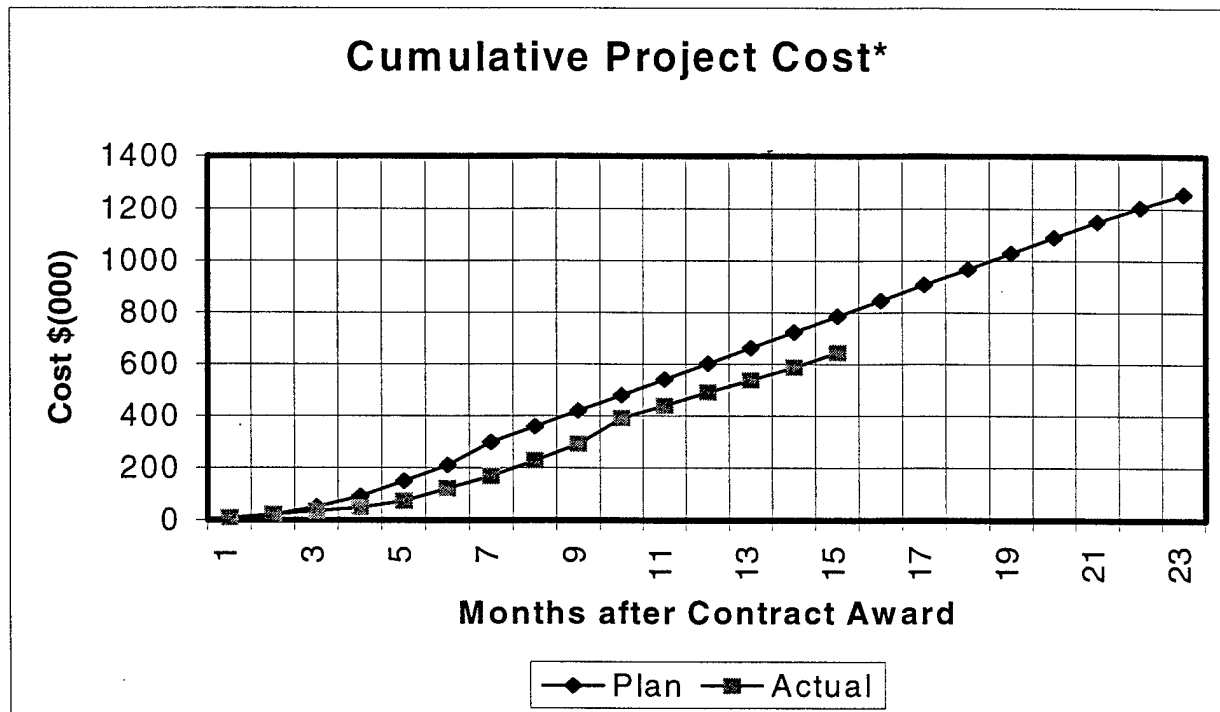
We continue to work the development of the audio firmware for the DSP. We await delivery of the simulator to support debug. We also are continuing negotiations with Lernout & Hauspie on access to their noise cancellation algorithms.

The revised optics designs are progressing on schedule. We have begun optimizations on the optic design based on the Colorado Micro Display product (CMD). We have also begun optimizing the electronics design in order to incorporate the CMD ASIC once it is available. We expect to use the direct memory interface to the display's frame buffer, thus allowing us to disable (or leave unpowered) the display logic on the StrongARM. The expectation is that this will result in additional power savings and improved battery performance.

We have identified an existing open source application that can be used to control remote computers. This application is interesting because it provides a significantly similar capability as the distributed video and audio drivers that we have been developing. The application is called VNC and has been developed by researchers at AT&T in the United Kingdom. We are evaluating the application to determine if it is a viable replacement for the ViA developed drivers. If not, perhaps it will provide us with ideas on how to increase performance of the system. Unfortunately, the design does require +/- 12V, which will cause additional inefficiencies in the power supply.

We continue to work with the University of Minnesota to incorporate their battery technology into the design. We are presently working with the University to optimize our use of their charging/discharging circuit. A few issues remain to be resolved. In the meantime, we are also reviewing reference design from National Semiconductor. The National designs will serve to mitigate risk should we not succeed at using the University's solution.

2. Project Cost



Cost incurred for the period and total cost which does not include G&A and Fee.

Current Month's Cost*	Cumulative Cost
\$57,311	\$645,305

* Current month cost is 1 June through 30 June.

Person-hours for the period and cumulatively.

Current Month's Hours	Cumulative Hours
805.00	10,188.30

3. Schedule and Staffing

Eric Bie has joined the team to work on the DSP code for the audio encoding/decoding. Bill Meuleners will be joining the team in July to assist in the mechanical design activities.

We are assuming that the next TIM will be held in September after Kathleen Griggs returns from her maternity leave.

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